REMARKS

The non-final Office Action was issued on pending claims 1-4. Claims 1-4 stand rejected. In this Response, claim 1 has been amended and no claims have been added or cancelled. Thus, claims 1-4 are pending in the application.

Applicant invites the Examiner to call Applicant's Representative to discuss any issues with this application.

Double Patenting

At page 2 of the Office Action, claims 1-4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of copending Application No. 10/577,961. Applicant respectfully disagrees.

Claim 1 Application No. 10/577,961 recites "A transmissible connecting mechanism driving a lead air control valve and an air-fuel throttle valve of a carburetor of a stratified scavenging two-cycle engine in an interlocking manner, wherein

the transmissible connecting mechanism comprises a cam mechanism which forcibly drives a valve shaft of one of the lead air control valve and the air-fuel mixture throttle valve in an interlocking manner by a reciprocating rotation of a valve shaft of the other one of the lead air control valve and the air-fuel mixture throttle valve." A comparison of claim 1 of the present application to claim 1 of the '961 application shows the two claims pertain to different inventions and are significantly different from each other. The two claims recite quite different structures. For example, claim 1 of the present application recites "the drive shaft and the driven shaft are disposed in a configuration to form an angle between the drive shaft and the driven shaft" which does not appear in claim 1 of the '961 application.

The '961 application and the present invention have similar drawings for Figs. 1 and 2 to show stratified scavenging two-cycle engines. However, each one of the two stratified scavenging two-cycle engines has a different invention. For example, Figs. 3-7 of the present application show a characteristic feature of the present invention, especially Figs. 3, 5 and 6

which show a transmissible connecting mechanism between valve shafts forming an angle. Such inventive structure is not disclosed in the prior invention of the '961 application.

The invention of the '961 application is intended to compulsively drive a lead air control valve and an air-fuel throttle valve in an interlocking manner. On the contrary, the present invention has the feature that a part of a contact surface of the first cam member and a part of a contact surface of the second cam member are always maintained in a contact state at a time of a contact transmission of the first cam member and the second cam member. In a configuration of a stratified scavenging two-cycle engine having the lead air control valve shaft and an air-fuel mixture throttle valve shaft disposed in parallel, there are problems as described in paragraphs [0010] and [0011] of the present specification.

> [0010] In a stratified scavenging two-cycle engine, in order to further reduce an exhaust gas component, it is necessary to increase an amount of a lead air. Accordingly, it is possible to increase the amount of the lead air by making a diameter of a lead air pipe line large, however, there is generated a problem that a volumetric capacity of a structure becomes large by making the diameter of the lead air pipe line large.

> [0011] Further, it is possible to make an area of the pipe line equal to or more than the case that the diameter of the lead air pipe line is increased, by increasing the number of the lead air pipe line. However, in the case that the air-fuel mixture throttle valve shaft of the carburetor and the lead air control valve shaft are in a parallel state, there is a problem that the structure area becomes large in the same manner as the case that the diameter of the lead air pipe line is increased by increasing the number of the lead air pipe line.

In order to resolve those problems, the present invention in provides both valve shafts - the lead air control valve shaft and the air-fuel mixture throttle valve shaft - disposed so as to form an angle with respect to each other as described in the paragraph [0012].

> [0012] In order to solve the problem, a countermeasure that the lead air control valve shaft and the air-fuel mixture throttle valve shaft of the carburetor and structured in a layout forming an angle such as an oblique state, a twisted state or the like is proposed

by the applicant of the present invention. In the case that the lead air control valve shaft and the air-fuel mixture throttle valve shaft of the carburetor are arranged in the oblique state or the twisted state, the structure of the transmissible connecting mechanism for connecting between both the valve shafts in a transmissible manner comes into question. The present invention provides a transmissible connecting mechanism between valve shafts forming an angle, which is provided for solving the problem in the structure of the transmissible connecting mechanism.

The present invention further improves the feature in which both valve shafts (the lead air control valve shaft and the air-fuel mixture throttle valve shaft) are disposed so as to form an angle with respect to each other. Furthermore, as described in paragraph [0017], the present invention is also intended to provide a transmissible connecting mechanism which can provide a compact structure of a stratified scavenging two-cycle engine without sacrificing a field product in a height direction of the stratified scavenging two-cycle engine.

These objects of the present invention are quite different from the object of the invention in the '961 application which compulsively drives both valve shafts in a conjunction manner when the valves are in opening and closing operations. Also, the present invention has characteristic features which are not disclosed by the invention in the '961 application. For example, in the present invention, the drive shaft and the driven shaft are disposed in a configuration to form an angle between the drive shaft and the driven shaft. Also, a part of a contact surface of the first cam member and a part of as contact surface of the second cam member are always maintained in a contact state at a time of a contact transmission of the first cam member and the second cam member.

Moreover, the invention of the '961 application has the feature to compulsively drive one drive shaft by a reciprocating movement of the other valve shaft which is not part of claim 1 of the present application.

The invention of the '961 application and the invention of present application were invented to solve different problems, and thus, there structural features are different from each

other. Furthermore, the claimed structures of the inventions of the present application and the '961 application are significantly different.

Therefore, there is no obviousness-type double patenting between the present application and the '961 application, and the double patenting rejection should be withdrawn.

Claim Rejections – 35 USC §102

At page 3 of the Office Action, claims 1-4 are rejected under 35 U.S.C. §102(b) as being anticipated by Ii et al. (US 4,414,162). Applicant respectfully disagrees.

As described above regarding the double patenting rejection, the present invention provides the feature in which the lead air control valve shaft and the air-fuel mixture throttle valve shaft of the carburetor are disposed so as to form an angle. Accordingly, claim 1 pertains to a transmissible connecting mechanism between valve shafts forming an angle and calls for "wherein the drive shaft and the driven shaft are disposed in a configuration to form an angle between the drive shaft and the driven shaft."

Initially, Ii et al. pertains to an air valve type two-cycle twin compound carburetor. Ii et al. does not pertain to a stratified scavenging two-cycle engine, whereas the present invention does pertain to a stratified scavenging two-cycle engine. Furthermore, Ii et al. simply does not have or suggest a transmissible connecting mechanism between valve shafts forming an angle wherein the drive shaft and the driven shaft are disposed in a configuration to form an angle between the drive shaft and the driven shaft. Applicant's claim 1 claims such structure. As shown in Figs. 1-3 of Ii et al., a shaft 12 and another shaft 28 are arranged in parallel. Also, the shaft 12 and another shaft 22 are also arranged in parallel. The configurations between the Ii et al. shafts are parallel configurations which are significantly different from the Applicant's claimed structure in which the drive shaft and the driven shaft are disposed in a configuration to form an angle.

Even further, Applicant's transmissible connecting mechanism is quite different from the Ii et al. transmissible connecting mechanism. As to the Ii et al. transmissible connecting

mechanism between the shaft 12 and the shaft 28, the shafts are connected by a connecting rod 41. However, one end of the connecting rod 41 is pivotally supported by a lever 40 fixed to the shaft 12 while the other end is pivotally supported by a first lever 42 rotatably provided to the shaft 28. As shown in Ii et al. Fig. 2, the first lever 42 is makes contact with a second lever 42 fixed to the shaft 28. (See Ii et al. column 4, lines 8-20.) The Ii et al. shaft 28 of an air valve 25 is connected through a link, or the like (not shown), to a metering needle (not shown) co-operating with a secondary main jet 29. (See Ii et al. column 3, lines 56-58.) The Ii et al. transmissible connecting mechanism between the shaft 12 and the shaft 28 does not have Applicant's first cam member and second cam member which are transmitted to each other in a contact manner as claimed in claim 1.

As to the Ii et al. transmissible connecting mechanism between the shaft 12 and the shaft 22, a lever 13 is secured to the shaft 12 of the primary throttle valve 11 and a kick lever 14 is rotatably mounted on the shaft 12 in such a manner that, when the primary throttle valve 11 is opened in the counterclockwise direction by a predetermined angle from the closing position shown in Fig. 1, the lever 13 falls in abutting contact with one end 14a of the kick lever 14. A long slot 14b is formed on the other end of the kick lever 14. A pin 24 of lever 23, secured to the shaft 22 of the secondary throttle valve 21, is engaged with the long slot 14b. (See Ii et al. column 3, lines 18-28.) Accordingly, the Ii et al. transmissible connecting mechanism between the shaft 12 and the shaft 22 is the lever 23, kick lever 14, and the lever 13. Conversely, Applicant's transmissible connecting mechanism has a first cam member and a second cam member which are transmitted to each other in a contact manner as claimed in claim 1.

Therefore, Ii et al. does not show, describe or suggest the structure that the drive shaft and the driven shaft arranged so as to form an angle, the transmissible connecting mechanism is arranged so as to be integrally rotatable with the drive shaft and the driven shaft respectively, and is provided as a pair of first cam member and a second cam member which are transmitted to each other in a contact manner. Furthermore, Ii et al. also does not show, describe or suggest the structure that a part of a contact surface of the first cam member and a part of a contact surface of the second cam member are always maintained in a contact state at a time of a contact

transmission of the first cam member and the second cam member. Applicant's claim 1 claims such structure.

Therefore, claim 1 is allowable. The dependent claims are allowable at least for the same reasons that claim 1 is allowable.

Thus, Applicant submits that the §102 rejections should be withdrawn.

CONCLUSION

For the foregoing reasons, Applicant submits that the patent application is in condition for allowance and requests a Notice of Allowance be issued.

Respectfully submitted,

EVEREST INTELLECTUAL PROPERTY LAW GROUP

Date: December 10, 2007

BY _____

Michael S. Leonard, Reg. No. 37,557
P.O. Box 708
Northbrook, IL 60065
Phone: (847) 272-3400